

LISTING OF CLAIMS

Claims 1-20 are pending in this application. By this amendment, claims 4, 8, 11, 13 and 14 are canceled without prejudice or disclaimer and claims 1-3, 5-7, 9 and 15-19 are amended and new claims 21-23 are added, as shown below.

The following listing of claims will replace all prior versions and listings.

1. (Currently Amended) A radiation imaging apparatus comprising:

a radiation generating source for radiating radiation to a subject;

a rotating unit for rotating the subject exposed to the radiation from the radiation generating source;

a two-dimensional detector for detecting the radiation; and

a calculating unit for calculating a distance between the radiation generating source and the two-dimensional detector;

wherein a cone angle of the radiation from the radiation generating source is selected to be in a range between six degrees and ten degrees based on either of information of the subject and information of imaging conditions, and the calculating unit calculates the distance between the radiation generating source and the two-dimensional detector based on the selected cone angle.

2. (Currently Amended) A radiation imaging apparatus comprising:

a radiation generating source for radiating radiation to a subject;

a rotating unit for rotating the subject exposed to the radiation from the radiation generating source;

a two-dimensional detector for detecting the radiation; and

a calculating unit for calculating a distance between the radiation generating source and the two-dimensional detector;

wherein the radiation generating source and the two dimensional detector are disposed at locations a distance which is the distance calculated by the calculating unit;

wherein a cone angle of the radiation from the radiation generating source is selected to be in a range between six degrees and ten degrees based on either of information of the subject and information of imaging conditions, and the calculating unit calculates the distance between the radiation generating source and the two-dimensional detector based on the selected cone angle.

3. (Currently Amended) A radiation imaging apparatus comprising:

a radiation generating source for radiating radiation to a subject;

a rotating unit for rotating the subject exposed to the radiation from the radiation generating source;

a two-dimensional detector for detecting the radiation;

a calculating unit for calculating a distance between the radiation generating source and the two-dimensional detector; and

a radiation generating source moving unit for disposing the radiation generating source and the two-dimensional detector at locations a distance which is the distance calculated by the calculating unit;

wherein a cone angle of the radiation from the radiation generating source is selected to be in a range between six degrees and ten degrees based on either of information of the subject and information of imaging conditions, and the calculating unit calculates the distance between the radiation generating source and the two-dimensional detector based on the selected cone angle.

4. (Canceled)

5. (Currently Amended) An apparatus according to claim 1 wherein there is provided for the calculating unit an input unit for inputting information of the subject, ~~such as a height of a lung field, a body height, and a weight of the subject,~~ and the calculating unit calculates the distance between the radiation generating source and the two-dimensional detector based on the information of the subject.

6. (Currently Amended) An apparatus according to claim 1 ~~[[4]]~~, wherein the calculating unit calculates the distance FDD [mm] between the radiation generating source and the two-dimensional detector based on the following relation

$$\text{FDD} = 0.5 \times \text{FOV} + 0.5 \times \text{HOV} / \tan (\Phi / 2) \quad [\text{mm}]$$

where FOV [mm] is an effective diameter of field of view, HOV [mm] is a reconstruction height, and Φ [degree] is the cone angle.

7. (Currently Amended) An apparatus according to claim 6, wherein there is provided for the calculating unit an input unit for inputting information of the subject, ~~such as a height of a lung field, a body height, and a weight of the subject,~~ and the calculating unit calculates the HOV based on the information of the subject.

8. (Canceled)

9. (Currently Amended) An apparatus according to claim 21 ~~[[8]]~~, wherein there is provided for the calculating unit an input unit for inputting information of imaging conditions, such as an anodic heat capacity, a cooling ability, and a CT scanning interval, and the calculating unit calculates the FDD based on the information of the imaging conditions.

10. (Previously presented) A radiation imaging apparatus comprising:
a radiation generating source for radiating radiation to a subject;
a rotating unit for rotating the subject exposed to the radiation from the radiation generating source; and

a two-dimensional detector for detecting the radiation;

wherein the radiation generating source and the two-dimensional detector are disposed at locations a distance which is in a range between 240 cm and 400 cm, where an imaging height (HOV) is equal to or more than 35 cm, an effective diameter of field of view (FOV) is equal to or more than 39 cm, a tube anodic heat capacity of the radiation generating source is equal to or less than 300 KHU, a tube cooling ability is equal to or less than 20 [1/min], and a radiography interval is equal to or less than two (2) minutes.

11. (Canceled)

12. (Previously Presented) An apparatus according to claim 1 further comprising a reconstruction unit for reconstructing an output signal from the two-dimensional detector.

13-14. (Canceled)

15. (Currently Amended) An apparatus according to ~~any one of~~ claim 2, wherein there is provided for the calculating unit an input unit for inputting information of the subject, ~~such as a height of a lung field, a body height, and a weight of the subject,~~ and the calculating unit calculates the distance between the radiation generating source and the two-dimensional detector based on the information of the subject.

16. (Currently Amended) An apparatus according to ~~any one of~~ claim 3, wherein there is provided for the calculating unit an input unit for inputting information of the subject, ~~such as a height of a lung field, a body height, and a weight of the subject,~~ and the calculating unit calculates the distance between the radiation generating source and the two-dimensional detector based on the information of the subject.

17. (Currently Amended) An apparatus according to ~~any one of claims~~ claim 2, wherein the calculating unit calculates the distance FDD [mm] between the radiation generating source and the two—dimensional detector based on the following relation

$$FDD = 3417 \times \text{SQRT}(D \times E \times T/84.6) \quad [\text{mm}]$$

where an anodic heat capacity is equal to or less than D [KHU], a cooling ability is equal to or less than E [1/min], and a CT scanning interval is T [min].

18. (Currently Amended) An apparatus according to ~~any one of claims~~ claim 3, wherein the calculating unit calculates the distance FDD [mm] between the radiation generating source and the two—dimensional detector based on the following relation

$$FDD = 3417 \times \text{SQRT}(D \times E \times T/84.6) \quad [\text{mm}]$$

where an anodic heat capacity is equal to or less than D [KHU], a cooling ability is equal to or less than E [1/min], and a CT scanning interval is T [min].

19. (Currently Amended) An apparatus according to ~~claims~~ claim 2, further comprising a reconstruction unit for reconstructing an output signal from the two-dimensional detector.

20. (Previously Presented) An apparatus according to claim 3, further comprising a reconstruction unit for reconstructing an output signal from the two-dimensional detector.

21. (New) A radiation imaging apparatus comprising:

a radiation generating source for radiating radiation to a subject;

a rotating unit for rotating the subject exposed to the radiation from the radiation generating source;

a two-dimensional detector for detecting the radiation; and

a calculating unit for calculating a distance between the radiation generating source and the two-dimensional detector;

wherein the calculating unit calculates the distance FDD [mm] between the radiation generating source and the two-dimensional detector based on the following relation

$$FDD = 3417 \times \text{SQRT}(D \times E \times T/84.6) \quad [\text{mm}]$$

where an anodic heat capacity is equal to or less than D [KHU], a cooling ability is equal to or less than E [1/min], and a CT scanning interval is T [min].

22. (New) A radiation imaging apparatus comprising:

a radiation generating source for radiating radiation to a subject;

a rotating unit for rotating the subject exposed to the radiation from the radiation generating source;

a two-dimensional detector for detecting the radiation; and

a calculating unit for calculating a distance between the radiation generating source and the two-dimensional detector;

wherein the radiation generating source and the two dimensional detector are disposed at locations a distance which is the distance calculated by the calculating unit;

wherein the calculating unit calculates the distance FDD [mm] between the radiation generating source and the two-dimensional detector based on the following relation

$$FDD = 3417 \times \text{SQRT}(D \times E \times T/84.6) \quad [\text{mm}]$$

where an anodic heat capacity is equal to or less than D [KHU], a cooling ability is equal to or less than E [1/min], and a CT scanning interval is T [min].

23. (New) A radiation imaging apparatus comprising:

a radiation generating source for radiating radiation to a subject;

a rotating unit for rotating the subject exposed to the radiation from the radiation generating source;

a two-dimensional detector for detecting the radiation;

a calculating unit for calculating a distance between the radiation generating source and the two-dimensional detector; and

a radiation generating source moving unit for disposing the radiation generating source and the two-dimensional detector at locations a distance which is the distance calculated by the calculating unit;

wherein the calculating unit calculates the distance FDD [mm] between the radiation generating source and the two-dimensional detector based on the following relation

$$FDD = 3417 \times \text{SQRT}(D \times E \times T/84.6) \quad [\text{mm}]$$

where an anodic heat capacity is equal to or less than D [KHU], a cooling ability is equal to or less than E [1/min], and a CT scanning interval is T [min].